WSV.

WEIDOULI VALVES CO., LTD.



Add:No.20,Xingyu Road,Airport Industrial Zone, Wenzhou City, P.R. China

Tel: 0086-577-86921659 Fax: 0086-577-86926789

Website: www.wsv-valve.com(EN) www.weidouli.com(CN) Email: sale@weidouli.com





GATE VALVES

WEIDOULI VALVES CO., LTD.



The name trust for Special Alloy Valves

Brief Introduction

The history of Weidouli dates back to 1989, the initial company named Lixin established in that year with prospective view to begin with exotic material valves manufacturing. With an increase of its production capacity and satisfaction of domestic and oversea clients' requirements, Weidouli furnished with a new modern factory filled with advance and large CNC machine facilities, fabrication, inspection and test facilities, total factory occupied area to be 43500m².

Advanced manufacturing processes enable us to produce a wide range of valves from bars and forgings, castings. Valves can be designed, manufactured, assembled and tested in accordance with ANSI/API/ASME norms, DIN/ ISO/BS specifications, NORSOK requirements, JIS standards and tailor-made with sizes varying form 2" up to 100". Moreover, sizeable stock allows Weidouli to offer a broad selection of exotic materials, which diversify with Titanium, Nickel alloy, Zirconium, Super Duplex, Alloy 20 etc, whilst keeping production time to a minimum.

Weidouli has worked diligently in past decades to secure our advantageous industry position and become a highly respected and valuable enterprise to the area of anti-corrosive valves application and come to being an culture: Cooperate Sincerely, Create Win-win.

Weidouli will continue to play a good role and make its unceasing efforts in the valve markets with our goals in mind: Global Quality, Total Reliability.

CEO, Chengrui Xia



















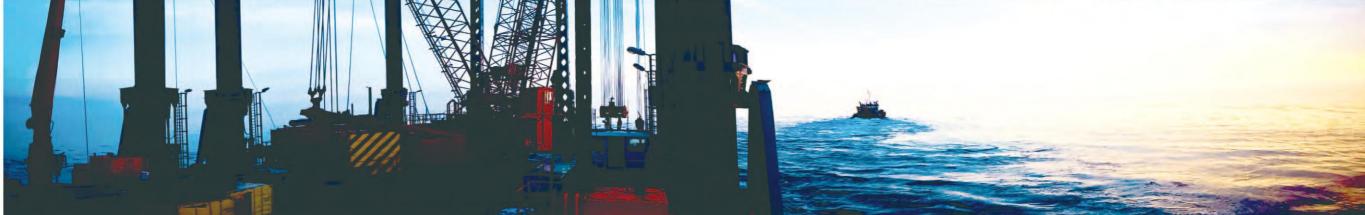
Global Quality. Total Reliability.

Weidouli have ISO 9001/ISO 14001/OHSAS 18001/API 607/API 6FA/CE/EAC/ATEX/ISO 15848-1/ TS etc. qualifications to guarantee the realizable quality. Weidouli system includes the selection of raw material from approved vendors, and rigorous oversight of our manufacturing process that is vital to quality control. Our extensive quality control system carefully monitors our manufacturing processes to assure a product that performs to the highest industry standards. Quality assurance procedures include 100% hydrostatic and pneumatic testing of all valves in full conformance to applicable API standards and industry codes.

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Performance----













Customer Relationship Management (CRM) & Production MES System

All daily business actions are controlled via CRM system to ensure transaction traceability and durability. The use of series number allows Weidouli the ability to not only ensure the quality of components used but to monitor and trace the fabrication process as well.

CNC Machine

Weidouli valves manufacturing plant comprises a well and equipped huge CNC machine shop with full design fabrication, inspection and test facilities.

Dynamic Inventory

By strategicly prolonged cooperation with our sub suppliers, Weidouli is advantageous in price and flexible in delivery with a large scale of stocks for casting, semi-finished parts and finished valves to meet with your urgent need.



Extensive in-house testing and laboratory facilities are available including



- □ Tensile/Bend/Hardness Test/Impact Test
- Dye Penetrant
- Positive Material Identification
- Direct Alloy Analysis
- Ultrasonic thickness test
- Metallographic examination
- ☐ Chemical Analysis



Coordinate Measuring Machine(CMM):

CMM is a device that measures the geometry of physical objects by sensing discrete points on the surface of the object with a probe. Weidouli qualified products are well machined and controlled typically with micrometer precision.



Extensive in-house testing and laboratory facilities are available including:

Cleaning room

Weidouli establishes a Class 100000 Cleanroom facility for cleaning, assembly, testing and packing of Weidouli valves to be used in high purity applications. By performing these procedures in a cleanroom, Weidouli delivers valves which can be placed directly into high purity systems without the need for any component cleaning in the filed, such as semiconductor, chemical, pharmaceutical and other industries which have standards for high purity,



Dechlorination Equipment

To avoid the iron or other metal pollution on finished valves and free of corrosion, all the testing water and cleaning water are treated and stored through a dechlorination equipment owned by Weidouli.



Special Treatment Laboratory

Vacuum hardness treatment especially for Titanium and Zirconium Treatment: Titanium stem/seat/sphere surface hardening treatment, so that a protective film formed on the surface, to improve the corrosion resistance, but also greatly relief stress and improve the surface hardness, not easy to scratch.

Titanium surface with primary hardness HV≤ 235 can approach to HV800 after this treatment.









WEIDOULI GATE VALVES OVERVIEW

Application & Function

Gate valves are used in straight-flow fluid systems where a minimum amount of friction is required. Unlike other valves, gate valves are constructed to be used either completely open or closed. If partially open, the fluid velocity can damage the gate valve's seal and cause leakage.

Gate valves are characterized by a traveling wedge, which is moved with the operation of the stem nut. The Wedge travels perpendicular to the direction of the flow.

Gate valves usually have a minimum pressure drop when fully open, provide tight shut-off when fully closed, and remain relatively free of contamination buildup.

Design Features

ASME Flanged Gate Valve

Design	ASME B16.34, API6D, API 600, API 602
Testing	API 598, API 6D
Face to face	ASME B16.10
Flanged end	ASME B16.5, ASME B16.47
Pressure temperature rating	ASME B16.34
Visual inspection of casting	MSS-SP-55
Standard markings	MSS-SP-25
Pressure equipment CE-PED	Directive 97/23/EC & 2014/68/EU
NACE	MR 0175 2003



Pressure	Flange	BW/SW	NPT
150LB	½" up to 60"	½" up to 60"	1/2" up to 4"
300LB	½" up to 60"	½" up to 60"	½" up to 4"
600LB	½" up to 60"	½" up to 60"	½" up to 2"
900LB	½" up to 40"	½" up to 40"	½" up to 2"
1500LB	½" up to 24"	1/2" up to 24"	½" up to 2"

1.Other unspecified standards and sizes are upon request.

2. Other ends criterion

Threaded NPT: ASME B1.20.1

Socket weld: ASME 16.11

Butt weld: ASME 16.25

GATE VALVES 09



API 600 GATE VALVES GENERAL HIGHTLIGHTS

Weidouli 2" and above gate valves are manufactured to API 600, ASTM B16.34 and tested to API 598.

Body & Bonnet

The design of the body&bonnet connection varies depending on the class of the valve. Class 150LB~600LB gate valves with bolted bonnet design, class 900LB and above gate valves with pressure seal bonnet design. Bodies and bonnets are high quality cast and afterwards precisely machined, directing the attention to prevent stress concentration.

The bodies of gate valves consist of a straight through port that guarantees minimal turbulence and resistance to flow. In both designs, bolted bonnet and pressure seal, the bodies consist of guide slots to accommodate the wedge during opening or closing of the valve.

Bonnets are made either of one piece only - the yoke then being an integral part of it - or have two pieces, depending on the size of the valve. This ensures the perfect alignment with the body what leads to an accurate opening and closing.

Wedge

3" and above gate valves are with flexible wedge unless otherwise specified by the customer. The flexible wedge shifts along the body of the valve during opening and closing, being held in position by a guide slot that minimizes the friction between body seat and wedge.

Stem

The stem of Weidouli gate valves are forged from one piece and TR threaded, then mechanized and finally provided with a smooth finishing in order to minimize friction. In gate valves, the union of stem and wedge shall be in T form, it is designed to prevent the stem disengaging itself from the wedge while being in service.

Packing

The packing is designed and arranged to ensure a maximum seal along the stem, and the standard packing is a nonasbestos type. We can supply any kinds of packing as required by customer.

Body&Bonnet Gasket

The design of the body-bonnet gaskets varies depending on the class of the valve.

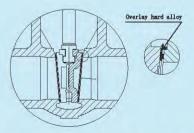
Class 150 gate valves consist of a square type gasket, class 300 and higher class valves consist of a circular type gasket.

Gland

The gland is made of two pieces. Packing box is in contact with the packing which is connected to gland flange. Particular design permits a correct pressure on the packing without any damage to stem due to friction or corrosion. This feature is only for special alloy material valves.

Seat

Weidouli API 600 gate valves are with integral seat design. The sealing surface with hard facing design is upon request. High-quality deposit of hard facing materials including CoCr alloy, 13Cr etc.



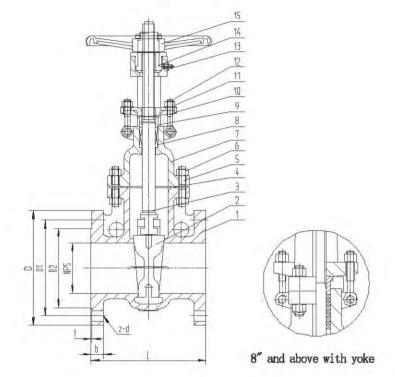
Handwheels are designed for easy operation. With Bevel gearing, electric actuator or pneumatic actuator are available for more difficult services.

Others

* Full bore * Outside screw and yoke (OS&Y) * Bolted bonnet * Non-rising handwheel * Ends: Flange, BW, SW, NPT



API 600 GATE VALVES MAIN PARTS & DIMENSIONS



No.	Main Parts	Example: Alloy 20
1	Body	A351 CN7M
2	Wedge	A351 CN7M
3	Stem	B462 N08020
4	Gasket	Alloy 20+Flexible graphite
5	Stud	A193 B8
6	Nut	A1948
7	Bonnet	A351 CN7M
8	Packing	Flexible graphite
9	Gland bushing	B462 N08020
10	Gland flange	A351 CF8
11	Nut	A1948
12	Bolt	A193 B8
13	Grease nipple	Bronze
14	Stem nut	ZQAL9-4
15	Handwheel	DI+Anti-corrosive rubber

* Dimensions (mm)

Size (Inch)		Class 150LB					Class 300LB					Class 600LB									
(inen)	L.	D	D1	D2	b	f	z-d	L	D	D1	D2	b	f	z-d	L	D	D1	D2	b	f	z-d
2"	178	152	120.5	92	16	1.6	4-19	216	165	127	92	22	1.6	8-19	292	165	127	92	33	6.4	8-19
2-1/2"	190	178	139.5	105	18	1.6	4-19	241	190	149	105	25	1.6	8-22	330	190	149	105	36	6.4	8-22
3"	203	190	152.5	127	19	1.6	4-19	283	210	168	127	29	1.6	8-22	356	210	165	127	39	6.4	8-22
4"	229	229	190.5	157	24	1.6	8-19	305	254	200	157	32	1.6	8-22	432	273	216	157	45	6.4	8-25
5"	254	254	216	186	24	1.6	8-22	381	279	235	186	35	1.6	8-22	508	330	266.5	186	52	6.4	8-29
6"	267	279	241.5	216	26	1.6	8-22	403	318	270	216	37	1.6	12-22	559	356	292	216	55	6.4	12-29
8"	292	343	298.5	270	29	1.6	8-22	419	381	330	270	41	1.6	12-25	660	419	349	270	63	6.4	12-32
10"	330	406	362	324	31	1.6	12-25	457	444	387.5	324	48	1.6	16-29	787	508	432	324	71	6.4	16-35
12"	356	483	432	381	32	1.6	12-25	502	521	451	381	51	1.6	16-32	838	559	489	381	74	6.4	20-35

Notes:

API 602 GATE VALVE GENERAL HIGHTLIGHTS

Weidouli 2" and below gate valves are manufactured to API 602 and tested to API 598.

Body & Bonnet

The design of the body&bonnet connection varies depending on the class of the valve. Class 150LB~600LB gate valves with bolted bonnet design, class 900LB and above gate valves with pressure seal bonnet design. Bonnets are made either of one piece only - the yoke then being an integral part of it. This ensures the perfect alignment with the body what leads to an accurate opening and closing.

Wedge

2" and below gate valves are with solid wedge unless otherwise specified by the customer.

Stem

The stem of Weidouli gate valves are forged from one piece and TR threaded, then mechanized and finally provided with a smooth finishing in order to minimize friction.

In gate valves, the union of stem and wedge shall be in T form, it is designed to prevent the stem disengaging itself from the wedge while being in service.

Packing

The packing is designed and arranged to ensure a maximum seal along the stem, and the standard packing is a non-asbestos type. We can supply any kinds of packing as required by customer.

Body&Bonnet Gasket

The design of the body-bonnet gaskets are all in a circular design.

Gland

The gland is made of two pieces. Packing box is in contact with the packing which is connected to gland flange. Particular design permits a correct pressure on the packing without any damage to stem due to friction or corrosion. This feature is only for special alloy material valves.

Seat

Weidouli API 602 gate valves are with renewable seat design.

The sealing surface with hard facing design is upon request. High-quality deposit of hard facing materials including CoCr alloy, 13Cr etc.

Operation

Handwheels are designed for easy operation.

Others

* Reduce bore * Outside screw and yoke (OS&Y) * Bolted bonnet * Non-rising handwheel * Ends: Flange, BW, SW, NPT

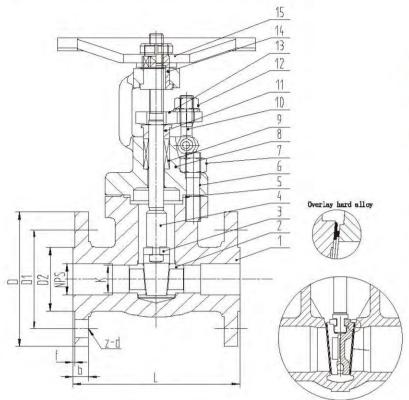


^{*}Other sizes & pressures are avaliable upon request.

^{*}Weidouli reserves the right to change this information without notice.



API 602 GATE VALVES FLANGE ENDS



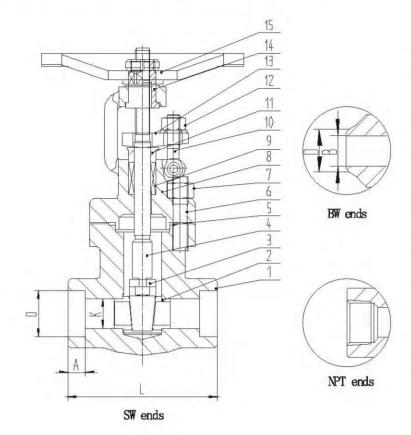
No.	Main Parts	Example : C95800
1	Body	B148 C95800
2	Seat	B148 C95800
3	Wedge	B148 C95800
4	Stem	B865 N05500
5	Gasket	PTFE
6	Stud	A193 B8
7	Nut	A1948
8	Bonnet	B148 C95800
9	Packing	PTFE
10	Bolt	A193 B8
11	Gland bushing	B865 N05500
12	Nut	A1948
13	Gland flange	A351 CF8
14	Stem nut	SS410
15	Handwheel	DI+Anti-corrosive rubber

* Dimensions (mm)

Size		Class 150LB				Class 300LB						Class 600LB									
(Inch)	L	D	D1	D2	b	f	z-d	L	D	D1	DZ	b	f	z-d	L	D	D1	D2	b	f	z-d
1/2"	108	89	60.5	35	12	1.6	4-15	140	95	66.5	35	15	1.6	4-15	165	95	56.5	35	22	6.4	4-15
3/4"	117	98	70	43	12	1.6	4-15	152	117	82.5	43	16	1.6	4-19	190	118	82.5	43	23	6.4	4-19
1"	127	108	79.5	51	12	1.6	4-15	165	124	89	51	18	1.6	4-19	216	124	89	51	25	6.4	4-19
1-1/4"	140	117	89	64	13	1.6	4-15	178	133	98.5	63	19	1.6	4-19	229	133	98.5	63	28	6.4	4-19
1-1/2"	165	127	98.5	73	15	1.6	4-15	190	156	114.5	73	21	1.6	4-22	241	156	114.5	73	30	6.4	4-22
2"	178	152	120.5	92	16	1.6	4-19	216	165	127	92	22	1.6	8-19	292	165	127	92	33	6.4	8-19

Notes:

API 602 GATE VALVES SW&BW & NPT ENDS



No.	Main Parts	Example : Incoloy825
1	Body	A494 CU5MCuC
2	Seat	B564 N08825
3	Wedge	B564 N08825
4	Stem	B564 N08825
5	Gasket	PTFE
6	Stud	A193 B8
7	Nut	A1948
8	Bonnet	A494 CU5MCuC
9	Packing	PTFE
10	Bolt	A193 B8
11	Gland bushing	B564 N08825
12	Nut	A1948
13	Gland flange	A351 CF8
14	Stem nut	SS410
15	Handwheel	DI+Anti-corrosive rubbe

* Dimensions (mm)

Size			150LB W			Class 150LB NPT				
(inch)	L	D	A	K	L	D	В	K	Ĺ	K
1/2"	79	21.8	10	11	79	21.3	15.5	11	79	11
3/4"	92	27.2	13	13	92	26.9	21	13	92	13
1"	111	33.9	17	17	111	33.7	27	17	111	17
1-1/4"	120	42.7	23	23	120	42.4	35	23	120	23
1 -1/2"	120	48.8	29	29	120	48.3	41	29	120	29
2"	140	61.2	36	36	140	60.3	52	36	140	36

Notes:

^{*}Other sizes & pressures are available upon request.

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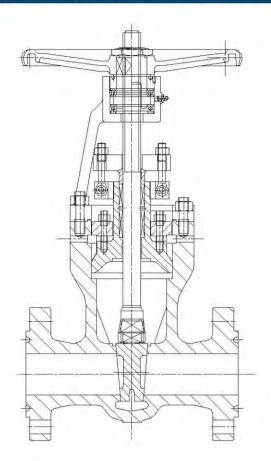
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PRESSURE SEAL GATE VALVES

GENERAL HIGHLIGHTS



- * Compared with bolted bonnet, pressure seal design is more compact and provides absolute reliable sealing.
- * Hard faced wedge improves the erosion resistance and prolongs the valve usage.

Outside screw and yoke (OS&Y), rising stem.

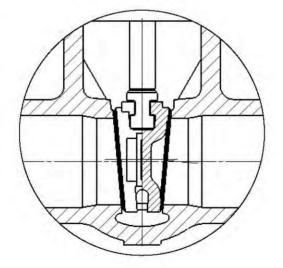
- * The gland is made of two pieces. Packing box is in contact with the packing which is connected to gland flange.

 Particular design permits a correct pressure on the packing without any damage to stem due to friction or corrosion.

 This feature is only for special alloy material valves.
- * Packing used in flexible graphite with high strength and low friction coefficient. Packing seal online adjustment.
- * Seal gasket load ring with stand upward thrust of bonnet load; Graphite plated seal gasket provides tight closure
- * The sealing surface with hard facing design is upon request. High-quality deposit of hard facing materials including CoCr alloy, 13Cr etc.

Wedge

- * Stem seal consists of packing and back seat seal.
- * The slide is of wedge type,resilience and good sealing performance. Solid wedge(Size≤2") and flexible wedge(Size≥2") are available. The flexible wedge shifts along the body of the valve during opening and closing, being held in position by a guide slot that minimizes the friction between body seat and wedge. Wedge overlay CoCr alloy, 13Cr etc. as request. When the wedge full open, sealing surface is not easily eroded by medium compared with globe valve.
- * The bodies of pressure seal gate valves consist of a straight through port that guarantees minimal turbulence and resistance to flow. The channel of gate valve are symmetric on both side, the medium can flow in any direction on both side, easy to install and not subject to direction limitation.

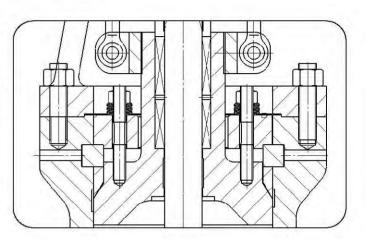


PRESSURE SEAL GATE VALVES

GENERAL HIGHLIGHTS

GENERAL FEATURES OF PRESSURE SEAL DESIGN

- * Pressure self-sealing is adopted between valve body and bonnet for reliable sealing, where the higher the pressure is the better sealing performance would be.
- * The valve stem thread will not come into contact with the medium, so the corrosion of medium to the thread is reduced.
- * Small switch torque, reliable sealing.
- * Outer row of studs secures the yoke to the body.
- * Weidouli offers graphite pressure seal gasket as standard, instead of soft iron gasket, providing a more flexible seal for application with fluctuating condition.

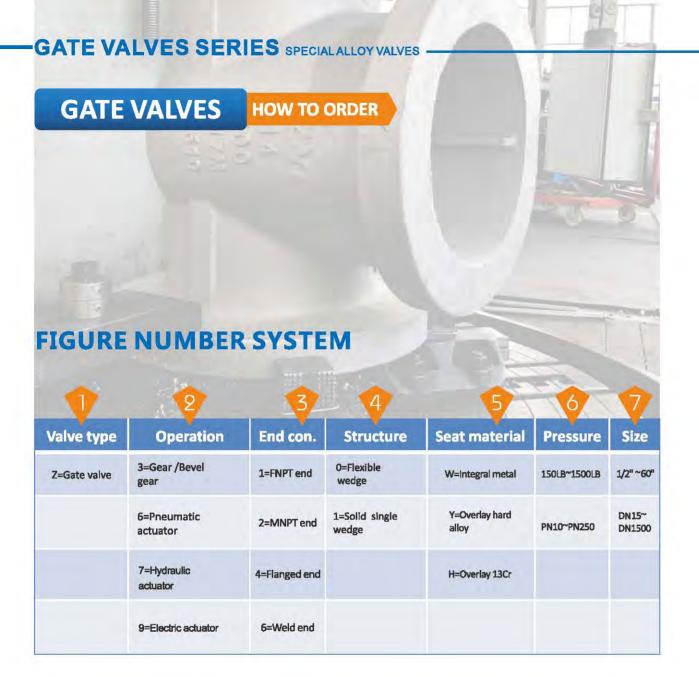




SERVICE RECOMMENDATION

- 1.Gate valves are normally used for on-off service. They are not recommended for throtting service.
- 2.Gate valves are normally installed in horizontal pipe run with the valve stem vertically up. They can also be installed in vertical or horizontal pipe runs with the valve stem other than vertical, but special construction may be required depending on valve size, service, conditions, and material. When purchasing valves for other than the normal installation, valve orienation should be specified.
- 3.After closing a gate valve with sufficient force to develop shutoff, the stem should be backed off slightly to relieve stem load. This will enable the stem to expand slightly-without bending or damaging the valve and will not affect valve shutoff.



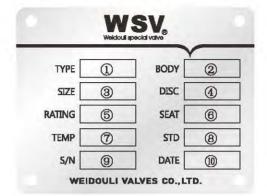


EXAMPLE: Gate valve, Flexible wedge, Flange end, Integral seat, 150LB, 8"

		Z4	0W-150LB-8	" Z40W-150LB-8"		
Z		4	0	W	150LB	8
Valve code	Operation	End con.	Structure	Seat	Pressure	Size
z	Handwheel	Flange type	Flexible wedge	Integral Metal	150LB	8"

GATE VALVES

VALVE MARKINGS

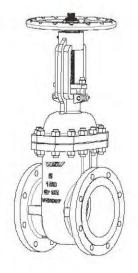




Valve ID Tag

No.			
1	Туре	Identifies valves type	
2	Body Material	Identifies body metal material composition	
3	Size	Identifies bore size	
4	Disc Material	Identifies wedge material composition	
6	Rating	Identifies pressure	
6	Seat	Identifies seat material composition	
7	Temp.	Identifies the suitable operating temperature	
8	Standard	Identifies design standard	
9	Serial Number	Identifies certified manufacturer's serial number	
10	Date	Identifies valve manufacturing date	

No.	ValveID Components
1	Brand
2	Size
3	Rating
4	Material Code
5	Heat Number



Notes: The figure number system outlined below is designed to cover the most common configurations. If special features are required that are not listed below, please advise the detailed description for accurate processing.



GATE VALVES

MATERIAL LIST

Material	ASTM		
	Casting	Forging	Bars
Titanium & Titanium Alloy			
Titanium Gr.2	B367 Gr.C-2	B381 Gr.F-2	B348 Gr.2
Titanium Gr.3	B367 Gr.C-3	B381 Gr.F-3	B348 Gr.3
Titanium Gr.5	B367 Gr.C-5	B381 Gr.F-5	B348 Gr.5
Titanium Gr.6	B367 Gr.C-6	B381 Gr.F-6	B348 Gr.6
Titanium Gr.12	B367 Gr.C-12	B381 Gr.F-12	B348 Gr.12
Titanium Gr.7	B367 Pd7B	B381 Gr.F-7	B348 Gr.7
Nickel			
Nickel 200	A494 CZ100	B160 N02200	B160 N02200
Nickel 201		B160 N02201	B160 N02201
Nickel Base Alloy		THE STATE OF STATE OF THE STATE	
Monel 400	A494 M35-1	B564 N04400	B164 N04400
Monel K500		B865 N05500	B865 N05500
Inconel 600	A494 CY40	B564 N06600	B166 N06600
Inconel 625	A494 CW6MC	B564 N06625	B446 N06625
Incoloy 800	A351 CT15C	B564 N08800	B408 N08800
Incoloy 825	A494 CU5MCuC	B564 N08825	B425 N08825
Hastelloy B	A494 N12MV	B335 N10001	B335 N10001
Hastelloy B-2	A494 N7M	B462 N10665	B335 N10665
Hastelloy C276	A494 CW12MW	B574 N10276	B574 N10276
Hastelloy C-22	A494 CX2MW	B574 N06022	B574 N06022
Hastelloy C-4	A494 CW2M	B574 N06455	B574 N06455
Hastelloy G		B462 N06007	B581 N06007
Zirconium			
Zirconium 702	B752 702C	B493 R60702	B550 R60702
Zirconium 705	B752 705C	B493 R60705	B550 R60705
Super Austenitic Stainless S	teel		
904L	904L	A182 F904L	B649 N08904
254SMO	A351 CK3MCuN	A182 F44	A276 S31254
AL-6XN	A351 CN3MN	B462 N08367	B688 N08367
ALLOY 20	A351 CN7M	B462 N08020	B473 N08020
Duplex & Super Duplex			
Duplex S31803	A890 4A	A182 F51	A276 S31803
Super Duplex S32750	A890 5A	A182 F53	A276 S32750
Super Duplex S32760	A890 6A	A182 F55	A276 S32760
Ali-Bronze			
NI-Al-Br	B148 C95800/C95500		4

Notes:

PRODUCT FIELD

Petroleum Industry

The petroleum industry, also known as the oil industry or the oil patch, includes the global processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines), and marketing of petroleum products. Weidouli designed Duplex, Ali Bronze, Titanium valves are ideal products for the downstream and upstream pipe requirements.

Coal Chemistry

Coal Chemistry includes coal coking, gasification, liquefaction, coal refinery etc. Weidouli designed valves are mostly used for coal coking, gasification.

Organic Chemistry

An organic compound is virtually any chemical compound that contains carbon, although a consensus definition remains elusive and likely arbitrary. Weidouli has abundant performance on such applications, such as acetic acid, PTA, Alkylation, Cyclohexanone, BDO, sec-Butyl Acetate.

Inorganic Chemistry

Inorganic chemistry deals with the synthesis and behavior of inorganic and organometallic compounds. This field covers all chemical compounds except the myriad organic compounds (carbon based compounds, usually containing C-H bonds), which are the subjects of organic chemistry.

New Energy

Due to worldly fast-growth, energy consumption is increasing, energy supply and demand gap is increasing as well. Therefore, development of new energy becomes the main subjects for all around the world. New energy, is based on the new technology, the system development and utilization of renewable energy, such as nuclear energy, solar energy, ocean energy and so on.

Environmental Water Treatment

Water treatment is any process that makes water more acceptable for a specific end-use.

The end use may be drinking, industrial water supply, irrigation, river flow maintenance, water recreation or many other uses, including being safely returned to the environment.

Water treatment removes contaminants and undesirable components, or reduces their concentration so that the water becomes fit for its desired end-use.

^{*}The above materials are applicable to valve body. Contact Weldouli for the valve component material. Trademarks appeared on the book: SandivikAB for SAF 2205/SAF 2507; SPECIALS METALS for Inconel, Monel, Incoloy; Haynes for Hastelloy; Allegheny Ludium for AL-6XN; Avesta for 254SMO.

*Other materials are available upon request, such as stainless steel, etc.





Weidouli valves for critical applications in chemical and petrochemical process (PTA process, Acetic acid, sulfuric and nitric acid, and chlorine services, Caustic Soda etc.), Onshore/Offshore (Desalination processing, oil/water separation, Fire Fighting, Cooling system), FPSO/FSO, Oil&Gas, Water treatment, Refinery, Pulp & Paper, Mining, Power generation etc.